

REMARKS

Cancelled claims 37-39 and 41 were objected to because of the informalities noted in paragraph 1 of the Detailed Action section of the Office Action mailed December 13, 2002. The Examiner will please note that corresponding new claims 50, 52, 55, and 56 do not contain the informalities so noted.

Cancelled claims 21-23 were rejected under 35 U.S.C. §112, first paragraph, for the specific reasons set forth in numbered paragraph 3 of the Detailed Action section of the Office Action mailed December 13, 2002. The Examiner will please note that corresponding new claims 42-44 do not contain the deficiencies giving rise to the rejection of cancelled claims 21-23 on these grounds.

Cancelled claims 21-41 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the specific reasons set forth in numbered paragraph 5 of the Detailed Action section of the Office Action mailed December 13, 2002. The Examiner will please note that corresponding new claims 42-56 do not contain these deficiencies that gave rise to these rejections.

As best understood, the Examiner stated that claims 21-36 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,290,271 to Spiessl. Again, as best understood, the Examiner rejected cancelled claims 21-25 and 27-36 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 3,670,537 to Horgan. For the reasons that follow, Applicant traverses these grounds of rejecting corresponding new claims being presented herewith, the cross-references to which will be clear from the discussion that immediately follows.

Lastly, Applicants acknowledge with appreciation the Examiner's statement that claims 37-41 would be allowable if rewritten to overcome the rejections imposed under 35 U.S.C. §112, second paragraph, set forth above. Applicants will point out to the Examiner corresponding new claims being presented herewith and the Examiner will note that the deficiencies of corresponding original claims 37-41 have been removed.

New claim 42 is based on previous claim 21 and is now directed to an embodiment of the contacting surfaces displaceable relative to one another to obtain the essentially corresponding forces. In particular, claim 42 defines - as structural features for obtaining the essentially corresponding forces - that the contacting surfaces displaceable relative to one another cooperate by means of bearings arranged there between (see, e.g., previous claim 23, second alternative).

New claim 43 is based on previous claim 22 and is now directed to another embodiment of the contacting surfaces displaceable relative to one another to obtain the essentially corresponding forces. In particular, new claim 43 defines - as structural features for obtaining the essentially corresponding forces - that for a transition from the closed position to the open position the contact between the contacting surfaces displaceable relative to one another is lifted (see, e.g., Figs. 9a-9e).

New claim 44 only comprises the features of previous claim 23 related to the rotatable components.

The generic portion of new claim 45 comprises the features of previous claim 24, while the characterizing part of new claim 45 comprises the features of previous claim 26.

The generic portion of new claim 46 comprises the features of previous claim 24, while the characterizing part of new claim 46 comprises the features of previous claim 27.

The generic portion of new claim 47 comprises the features of previous claim 24, while the characterizing part of new claim 47 comprises the features of previous claim 29.

The generic portion of new claim 48 comprises the features of previous claim 24, while the characterizing part of new claim 48 comprises the features of previous claim 30.

New claim 49 is previous claim 28, unamended.

The generic portion of new claim 50 comprises the features of previous claim 31, while the characterizing part of new claim 50 comprises the features of previous claim 37.

New claim 51 corresponds with previous claim 33.

The generic portion of new claim 52 comprises the features of previous claim 34, while the characterizing part of new claim 52 comprises the features of previous claim 38.

New claim 53 corresponds with previous claim 36.

New claims 54 and 56 correspond with previous claims 39 to 41.

The wording “such as” objected by the Examiner has been replaced by the wording “selected from the group of” in new claims 42, 43, 45, 46, 47, 48, 50 and 52.

The “and/or” expressions objected by the Examiner have been replaced by the wording “at least one of” in new claims 47, 48 and 49 and the above individual claim amendments.

The Examiner reads the term “bearings” used in the previous claims as defining load-bearing surfaces, that cooperate with each other to transmit forces there between. This view of the Examiner is respectfully traversed.

In the present application, it is explicitly disclosed that the term “bearings” is used to indicate ball bearings, roller bearings and the like, but never to indicate just load-bearing surfaces (see specification, page 5, lines 8 to 10). This is even more evident since the present invention solves the problems associated with conventional load-bearing surfaces as contacting regions of movable part of a lock (see, e.g., description for Fig. 2a). Moreover, the term “support” is usually used to indicate load-bearing surfaces in contrast to the use of the term “bearings” used to indicate more complex structures. Therefore, the term “bearings” is maintained in the claims.

Further, the objection raised by the Examiner that the term “bearings” would not represent a limitation excluding just load-bearing surfaces is respectfully traversed. As set forth above, the term “bearings” does not just indicate load-bearing surfaces, but has to be read in its original, technical sense, i.e., ball bearings, roller bearings, etc.

The Examiner has raised a non-clarity objection concerning the wording that opening and closing forces essentially correspond. As disclosed in the specification, the wording “essentially correspond” indicates, in terms of the present invention, that a user at least virtually feels the same opening and closing forces (see original description

of Figs. 2a and 2b). However, the wording “essentially correspond” has been defined more precisely by structural features of the present invention (see above).

In this context, the Examiner refers to Figures 2a and 2b of the present application, which would show that the wording “essentially correspond” would not indicate that these forces correspond exactly. This objection raised by the Examiner is respectfully traversed. In the description, it is explicitly disclosed that by means of the present invention force-path functions without or with minimized hysteresis are obtained (see original description page 16, lines 13-17).

The Examiner has raised the objection that the alternatives defined in the previous claims 21 to 23 concerning the use of rotatable components and/or contacting surfaces displaceable relative to one another would not be supported by the original disclosure. This objection raised by the Examiner is respectfully traversed.

Throughout of the application documents, it is disclosed that (i) rotatable components or (ii) contacting surfaces displaceable relative to one another or (iii) both can be employed. Therefore, neither previous claims 21 to 23 nor new claims 42 to 44 lack support by the original disclosure.

US-6,290,270 cited by the Examiner corresponds with German patent DE 198 37 248 C2 referred to in the introductory portion of the present application.

In the present application, it is explicitly disclosed that DE 198 37 248 C2 and thus US-6,290,270 teach door locks exhibiting the problem that opening forces are greater than closing forces. Further, it is explicitly disclosed that this problem is solved by the door locks defined in previous claims 21 to 30, which form the basis of new

claims 42 to 49 (see specification, page 3, line 20 to page 6, line 30). At least for that reason, it is obvious that new claims 42 to 49 are allowable in view of US-6,290,270.

New claim 42 recites that the contacting surfaces displaceable relative to one another cooperate by means of bearings arranged between said surfaces. As can be derived from the figures of US-6,290,270, this US patent does not disclose contacting surfaces, that cooperate by means of bearings. Rather, US-6,290,270 discloses just conventional load-bearing contact faces. Moreover, US-6,290,270 does not include any evidence motivating a person skilled in the art to modify the lock according to US-6,290,270 such that the lock according to new claim 42 is obtained. Therefore, the subject matter according to new claim 42 is new and based on an inventive step in view of US-6,290,270.

New claim 43 defines that the contact between the contacting surfaces displaceable relative to one another is lifted for the transition from the closed position to the open position. In contrast thereto, US-6,290,270 discloses that its contacting surfaces maintain its contact for such a transition (see, e.g., the Figures of US-6,290,270). US-6,290,270 also does not include any hint motivating a person skilled in the art to modify the door lock according to US-6,290,270 such the lock according to new claim 43 is obtained. Rather, a complete redesign of the door lock according to US-6,290,270 would have been necessary to obtain the lock according to new claim 43, a modification a person skilled in the art would have refrained from. Therefore, the subject matter according to new claim 43 is new and based on an inventive step in view of US-6,290,270. As a result, the subject matter according to new claim 44 dependent

from claim 42 or 43 is also new and based on an inventive step in view of US-6,290,270.

The above observations given with respect to new claim 42 correspondingly apply to new claims 45 and 46, which also define that contacting surfaces, i.e., contact and active regions 30 and 22, cooperate by means of bearings.

The observations given above with respect to new claim 42 correspondingly apply to new claim 47, which also defines that the contact between contacting surfaces, i.e., contact region 30 and gripping device 18, are lifted for a transition from the closed position to the open position.

New claim 48 defines that the contact between contacting surfaces, i.e., active region 22 and contact region 30, is lifted for a transition from the open position to the closed position. US-6,290,270 does not also disclose such a movement of its contacting surfaces. Moreover, US-6,290,270 does not render obvious this feature of new claim 48 as set forth above with respect to new claim 43. Therefore, the subject matters according to new claims 45 to 48 are new and based on an inventive step in view of US-6,290,270. As a result, new claim 49 dependent from claim 45, 46, 47 or 48 is also patentable over US-6,290,270.

US-3,670,537 is not related to a door lock for an electrical household appliance, but is directed to a lock for a glass door. Thus, US-3,670,537 is not relevant to the subject matters according to new claims 42, 43 and 45 to 48. Even assuming US-3,670,537 would represent relevant prior art, the subject matters according to new claims 42, 43 and 45 to 48 are patentable over US-3,670,537.

New claim 42 defines that opening and closing forces essentially correspond due to contacting surfaces cooperating by means of bearings arranged there between. US-3,670,537 does not disclose that its bearings 83, 84, 85 and 86, to which the Examiner has referred to, act such that opening and closing forces essentially correspond. Rather, US-3,670,537 only discloses that these bearings just reduces forces but fails to provide any further details, especially that the desired force reduction results in equal opening and closing forces.

New claim 43 defines that the contact between the contacting surfaces is lifted for a transition from the closed position to the open position. This feature of the present invention is neither anticipated nor rendered obvious by US-3,670,537. According to US-3,670,537, all movements of components, which can be moved with respect to each other, occur in guided manner, i.e., contacts between cooperating surfaces are constantly maintained.

US-3,670,537 also does not render obvious the lock according to new claim 43. The constantly guided movement of components according to US-3,670,537 that can be moved with respect to each other is necessary to obtain a smooth opening of a glass door for which that known lock is provided. Therefore, a person skilled in the art would not have left that principle of constantly guided movements.

New claims 45 to 48 define that the active region of the gripping device just contacts the contact region in the open position of the door lock while the active region actually cooperates with the contact region in the closed position of the door lock in order to maintain the closed position.

These features of new claims 45 to 48 are not disclosed in US-3,670,537. According to the Examiner, components 12, 60 and 132 according to US-3,670,537 could be compared with the gripping device defined in new claims 45 to 48, and components 132 and 120 according to US-3,670,537 could be compared with the active region and the contact region, respectively, defined in the new claims 45 to 48. This reading of US-3,670,537 is not correct because the features defined in new claims 45 to 48 with respect to the gripping device and its active region, respectively, and the contact region are not disclosed for the previously mentioned components according to US-3,670,537.

Moreover, component 132 according to US-3,670,537 comparable with the active region defined in new claim 46 does not comprise a bearing as defined in new claim 46.

Further, component 120 on the one hand and components 12, 16, 132 on the other hand according to US-3,670,537 are not lifted with respect to each other for a transition from the closed position to the open position, and vice versa, as defined in new claim 47 and claim 48, respectively.

New claim 49 being dependent from pending new claims 45, 46, 47 or 48 is also patentable over US-3,670,537.

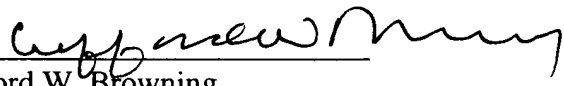
The Examiner considered previous claims 37 and 38 to be allowable. New claims 50 and 52 correspond with these previous claims. Thus, the subject matters according to claims 50 and 52 should also be patentable.

For all these foregoing reasons, Applicants respectfully request entry of the foregoing claim amendments, reconsideration of the present application in light thereof,

and in light of the foregoing remarks, and then allowance of new claims 42-56 over all the prior art of record.

Attached hereto are pages 16-20 that present a marked up version of the changes made to the claims of the application by the current Amendment. Page 16 is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted:

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 21-41 have been cancelled and new claims 42-56 have been added in lieu thereof.

42. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:
contacting surfaces which are displaceable relative to one another, which cooperate during transitions from a closed position for the door lock to an open position for the door lock and from the open position to the closed position, wherein the contacting surfaces displaceable relative to one another are constructed in such a manner that the contacting surfaces displaceable relative to one another cooperate by means of bearings arranged between said surfaces such that forces required during a transition from the closed position to the open position essentially correspond to forces required for a transition from the open position to the closed position.

43. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:
contacting surfaces which are displaceable relative to one another, which cooperate during transitions from a closed position for the door lock to an open position for the door lock and from the open position to the closed position, wherein the contacting surfaces displaceable relative to one another are constructed in such a manner that the contact between the contacting surfaces displaceable relative to one another is lifted for the transition from the closed position to the open position such that forces required during a transition from the closed position to the open position essentially correspond to forces required for a transition from the open position to the closed position.

44. (New) A door lock according to claim 42 or 43, comprising rotatable components, which cooperate during transitions from a closed position for the door lock to an open position for the door lock and from the open position to the closed position, wherein the rotatable components are rotatable by means of a bearing.

45. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a contact region (30) and
- a gripping device (18) with an active region (22), which in an open position of the door lock contacts the contact region (30) and in a closed position of the door lock cooperates with the contact region (30) in order to maintain the closed position, characterized in that
- the contact region (30) is provided on a circumferential line of a rotatably mounted axle (28) or on a circumferential line of a bearing rotatable relative to an axle.

46. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a contact region (30) and
- a gripping device (18) with an active region (22), which in an open position of the door lock contacts the contact region (30) and in a closed position of the door lock cooperates with the contact region (30) in order to maintain the closed position, characterized in that
- the active region (22) comprises at least one bearing, which contacts the contact region (30) at least during a transition from the closed position to the open position.

47. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a contact region (30) and
- a gripping device (18) with an active region (22), which in an open position of the door lock contacts the contact region (30) and in a closed position of the door lock cooperates with the contact region (30) in order to maintain the closed position,

characterized in that

- for a transition from the closed position to the open position, at least one of the contact region (30) and the gripping device (18) is displaceable relative to one another in such a manner that the cooperation of the active region (22) and the contact region (30) is lifted.

48. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a contact region (30) and
- a gripping device (18) with an active region (22), which in an open position of the door lock contacts the contact region (30) and in a closed position of the door lock cooperates with the contact region (30) in order to maintain the closed position,

characterized in that

- for a transition from the open position to the closed position, at least one of the contact region (30) and the gripping device (18) is displaceable relative to one another in such a manner that the contact between the active region (22) and the contact region (30) is lifted.

49. (New) A door lock according to claim 45, 46, 47 or 48, comprising:

- a contact region (30) and
- a gripping device (18) with an active region (22), which in an open position of the door lock contacts the contact region (30) and in a closed position of the door lock cooperates with the contact region (30) in order to maintain the closed position,

characterized in that

- the gripping device (18) is at least one of being rotatable by means of a bearing and displaceable by means of a closing lever (14), which is rotatable about an axle (12) by means of a bearing.

50. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a frame (100), and
- a closing lever (104) which is mounted on the frame (100) and can be reciprocated between a closed position and an open position for the door lock, characterized in that
- a steering arm (106), which is guided at one end in articulated fashion with the closing lever (104) and is guided at the other end on a tensioning lever (130), is connected to the closing lever (104) in such a manner that forces occurring between the steering arm (106) and the closing lever (104) during a transition from the closed position to the open position essentially correspond to forces occurring during a transition from the open position to the closed position.

51. (New) A door lock according to claim 50, characterized in that the closing lever (104) is mounted on the frame (100) by means of a bearing.

52. (New) A door lock for electrical household appliances, selected from the group of washing machines, dishwashers and tumble driers, comprising:

- a frame (100), and
- a tensioning lever (130), which is mounted on the frame (100) and can be reciprocated between a closed position and an open position for the door lock, characterized in that
- a steering arm (106), which is guided at one end in articulated fashion with a closing lever (104) and is guided at the other end on the tensioning lever (130), is connected to the closing lever (104) in such a manner that forces occurring between the steering arm (106) and the closing lever (104) during a transition from the closed position to the open position essentially correspond to forces occurring during a transition from the open position to the closed position.

53. (New) A door lock according to claim 52, characterized in that the tensioning lever (130) is mounted on the frame (100) by means of a bearing.

54. (New) A door lock according to claim 50 or 52, characterized in that the steering arm (106) is connected to the closing lever (104) by means of a bearing.

55. (New) A door lock according to one of claims 50 or 52, characterized in that the guidance for the steering arm (106) on the tensioning lever (130) is constructed in such a manner that forces occurring between the steering arm (106) and the tensioning lever (130) during a transition from the closed position to the open position essentially correspond to forces occurring during a transition from the open position to the closed position.

56. (New) A door lock according to claim 50 or 52, in which the steering arm (106) comprises crankpins (124), which are guided in a groove guide (140) of the tensioning lever (130), characterized in that bearings are arranged on the crankpins (124).